CLAIMS

1. An optical fat measuring apparatus comprising:

a light source section and a light receiving section arranged so as to obtain a plurality of transmitted to received light distances;

an arithmetic section which calculates information on fat in a living body on the basis of the quantity of light received by said light receiving section, the light being emitted by said light source section and propagating through the living body; and

a standard element having a waveguide which guides light from said light source section to said light receiving section when placed opposite said light source section and said light receiving section, said waveguide having a predetermined transmittance, and

wherein at least one of said light source section and said light receiving section, is arranged plurally.

2. The optical fat measuring apparatus according to Claim 1, having one of said light source sections and a plurality of said light receiving sections, and

wherein said apparatus comprises an operation checking section which compares a reference value for the quantity of light received predetermined for each said light receiving

section with the quantity of received light which has been guided from lighted said light source section to the plurality of said light receiving sections through said waveguide after said standard element has been placed so that said waveguide is opposite said light source section and said light receiving sections,

which operates if the quantities of light received by a smaller number of said light receiving sections than that of the plurality of said light receiving sections are smaller than said reference value for the quantity of light received corresponding to these light receiving sections, to determine that these light receiving sections are defective, and

which operates if each quantities of light received by all of the plurality of said light receiving sections are smaller than the reference value for the quantity of light received corresponding to said each light receiving sections, to determine that said light source section is defective.

3. The optical fat measuring apparatus according to Claim 1, wherein if said operation checking section determines that said light receiving section is defective, said operation checking section shows that said light receiving section determined to be defective must be cleaned or provides a corresponding sound output, and

if said operation checking section determines that said light source section is defective, said operation checking section shows that said light source section determined to be defective must be cleaned or provides a corresponding sound output.

4. The optical fat measuring apparatus according to Claim 1, having a plurality of said light source sections and one said light receiving section, and

wherein the apparatus comprises an operation checking section which compares a reference value for the quantity of light received predetermined for each said light source section with the quantity of received light which has been guided from the independently lighted plurality of said light source sections to said light receiving section through said waveguide after said standard element has been placed so that said waveguide is opposite said light source sections and said light receiving section,

which operates if the quantities of light received from a smaller number of said light source sections than that of the plurality of said light source sections are smaller than said reference value for the quantity of light received corresponding to these light source sections, to determine that these light source sections are defective, and

which operates if each quantities of light received from all of the plurality of said light source sections are smaller than the reference value for the quantity of light received corresponding to said each light source sections, to determine that said light receiving section is defective.

5. The optical fat measuring apparatus according to Claim 1, wherein if said operation checking section determines that said light source section is defective, said operation checking section shows that said light source section determined to be defective must be cleaned or provides a corresponding sound output, and

if said operation checking section determines that said light receiving section is defective, said operation checking section shows that said light receiving section determined to be defective must be cleaned or provides a corresponding sound output.

6. The optical fat measuring apparatus according to Claim 1, having one of said light source section and a plurality of said light receiving sections, and

wherein said arithmetic section has a correcting section which corrects measured values for said living body using the quantity of received light which has been guided from lighted said light source section to the plurality of said light

receiving sections through said waveguide after said standard element has been placed so that said waveguide is opposite said light source section and said light receiving sections.

7. The optical fat measuring apparatus according to Claim 1, having a plurality of said light source sections and one said light receiving section, and

wherein said arithmetic section has a correcting section which corrects measured values for said living body using the quantity of received light which has been guided from independently lighted plurality of said light source sections to said light receiving section through said waveguide after said standard element has been placed so that said waveguide is opposite said light source sections and said light receiving section.

8. The optical fat measuring apparatus according to Claim 6, wherein said light receiving section includes a first light receiving section and a second light receiving section, and

after said standard element has been placed so that said waveguide is opposite said light source section and said light receiving sections, said correcting section corrects the measured values for said living body on the basis of the ratio of the quantity of light received by said first light receiving

section, the light being guided from lighted said light source and to said first light receiving section through said waveguide, to the quantity of light received by said second light receiving section, the light being guided from lighted said light source to said second light receiving section through said waveguide.

9. The optical fat measuring apparatus according to Claim 7, wherein said light source section includes a first light source section and a second light source section, and

after said standard element has been placed so that said waveguide is opposite said light source sections and said light receiving section, said correcting section corrects the measured values for said living body on the basis of the ratio of the quantity of received light guided from independently lighted said first light source to said light receiving section through said waveguide, to the quantity of received light guided from independently lighted said second light source to said light receiving section through said waveguide.

10. The optical fat measuring apparatus according to any one of Claims 1 to 9, wherein said standard element is connected by a rotating shaft to a main body with said light source section and said light receiving section.